FACT SHEET

FINAL RULE TO REDUCE TOXIC AIR EMISSIONS FROM INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS

ACTION

- On February 26, 2004, the Environmental Protection Agency (EPA) issued a final rule to substantially reduce emissions of toxic air pollutants from industrial, commercial and institutional boilers and process heaters. Toxic air pollutants, also known as air toxics, are known or suspected to cause cancer, other serious health problems and environmental damage.

- This rule reduces emissions of a number of toxic air pollutants, including hydrogen chloride, manganese, lead, arsenic and mercury, by more than 58,000 tons annually in the fifth year after promulgation.

  This rule also reduces emissions of sulfur dioxide and particulate matter in conjunction with the toxic air pollutant reductions. This rule may result in 2,270 fewer premature deaths, 5,100 fewer cases of chronic bronchitis, reduced hospital admissions for pneumonia, asthma and cardiovascular problems. It may also result in 150,000 fewer respiratory incidences in children, lost work days, and restricted activity days for people with respiratory problems.

- Boilers burn coal and/or other substances such as wood to produce steam. The steam is used to produce electricity or provide heat. Process heaters heat raw or intermediate materials during an industrial process. Boilers and process heaters are used at facilities such as refineries, chemical and manufacturing plants, and paper mills. In addition, these boilers may stand alone to provide heat for shopping malls and university heating systems.

- Some of the air toxics targeted by this rule are known to cause cancer. EPA considers other air toxics such as hydrogen chloride and manganese to be “threshold pollutants,” pollutants that have known threshold levels, or cut-offs, below which health effects - such as respiratory irritation - are not likely to occur. Carcinogens are not threshold pollutants.

- The final rule limits the amount of air toxics that may be released from exhaust stacks of all new (built after January 13, 2003) and existing large and limited use solid fuel boilers and process heaters that are located at facilities considered to be major sources of air toxics. The Clean Air Act defines a major source as one that emits 10 tons a year or more of a single air toxic, or 25 tons a year or more of a combination of air toxics.

- EPA estimates that 58,000 existing boilers and process heaters, and 800 new boilers and process heaters built each year over the next 5 years will be subject to this final rule.

COMPLYING WITH THE RULE REQUIREMENTS

- Existing industrial boilers and process heaters must comply with the final rule no later than three years after the final rule is published. However, existing units may petition EPA for an extra year to comply. New industrial boilers and process heaters must comply with the final rule when they are brought on line. These new units have up to six months after the rule is final, or six months after startup, whichever is later, to demonstrate compliance with the new standards.

  The final rule contains alternative compliance options that will maintain low levels of emissions. This option provides flexibility for plant managers to meet the final emission limits by altering their work practices in ways that will reduce emissions, or they may install emissions control devices such as fabric filters and scrubbers to chemically or physically remove air toxics from the boiler or process heater emissions streams. The final rule is based on the use of these technologies. These systems not only reduce metals and hydrogen chloride emissions, they also reduce particulate matter and sulfur dioxide emissions.

- The final standard also allows a facility to comply with the rule by averaging emissions from all large solid fuel-fired boilers on-site. This emissions averaging provision provides flexibility in compliance, cost and energy savings, and does not lessen the stringency of the standard.

- The final rule includes a compliance alternative provided for in the Clean Air Act [section 112(d)(4)] based on threshold emission limits for hydrogen chloride (HCl) and manganese. If an owner/operator demonstrates that their boiler units can meet health-based threshold emission limits, then EPA will assert that those units do not pose a significant risk to human health or the environment.

- The final rule provides three ways a facility may demonstrate that a boiler or process heater meets the threshold emission limits that allow it to qualify for the compliance alternative.

  1. "Lookup tables" – listed in the rule and posted on the internet -- allow facilities to use a limited number of site-specific input parameters to determine whether emissions from boilers or process heaters might cause a hazard index limit for non-carcinogens to be exceeded.

  2. Facilities may demonstrate by modeling, using site-specific information that emissions of a combination of threshold pollutants such as HCl from the boiler or process heater under evaluation do not cause a hazard index limit to be exceeded.

     (Note: Facilities that meet either of the first two alternative compliance tests would not be required to install scrubbers to control certain air toxics emissions. These boilers or process heaters may be required to install fabric filters to reduce particle emissions for a separate particle standard for boilers.)

3. Boilers or process heaters fueled by dried wood may, via a similar eligibility test, exclude emissions of manganese from their calculation of total metals emitted. This total is used to determine if particulate matter emissions controls are required. These units may still be required to install other emissions controls.

- Facilities that are eligible for compliance alternatives established by today's final rule must assume federally enforceable emissions limitations. These limits ensure that their air toxics emissions do not exceed levels used to qualify for the compliance alternative.

HEALTH/ENVIRONMENTAL BENEFITS

- This final rule will protect human health and the environment by substantially reducing emissions of air toxics. EPA estimates total annual air toxic reductions of 58,000 tons per year in the fifth year after promulgation. Depending on the number of facilities demonstrating eligibility for the compliance alternatives, the total air toxics emissions reduced could be 50,600 tons per year. The main air toxics reduced are listed below:

Pollutant	Emissions Reductions
Hydrogen Chloride	42,300 tons
Metals	1,100 tons

- Exposure to emissions of these air toxics may produce a wide variety of human health effects including irritation of the lungs, skin and mucous membranes, problems with the central nervous system, kidney damage, and cancer. Lead is a very toxic metal. Long-term exposure to lead results in problems with the blood, central nervous system, blood pressure, and kidneys. EPA has classified lead as a probable human carcinogen.

  This final rule will also protect human health and the environment by reducing emissions of sulfur dioxide (SO2) and particulate matter (PM) in conjunction with the air toxic reductions. EPA estimates SO2 reductions between 49,000 and 113,000 tons per year and PM (measured as coarse particulate matter) reductions between 547,000 and 562,000 tons in the fifth year after promulgation. Depending on the number of facilities demonstrating eligibility for the compliance alternatives, the SO2 emissions reduced could be 49,000 tons per year and the PM emissions reduced could be 545,000 tons per year.

  EPA estimates that the total annualized benefits for the final rule will be $16.3 billion in the fifth year. Depending on the number of facilities demonstrating eligibility for the compliance alternatives, these annualized benefits could be $14.5 billion in the fifth year These estimates could be greater if the benefits from air toxic emission reductions could be quantified .

COST

- EPA estimates that new boilers coming on-line would already have the necessary control systems as a result of compliance with new source performance standards currently in place for industrial, commercial, and institutional boilers. Under the Clean Air Act, EPA is required to set "new source performance standards" to ensure that emissions from newly built or reconstructed facilities meet strict limits.

- EPA estimates that the total nationwide capital costs for the final rule is $1.7 billion for the first five years, with an annualized cost of $800 million in the fifth year. Depending on the number of facilities demonstrating eligibility for the compliance alternatives, these costs could fall to $1.4 billion in capital expenditures and $690 million per year in total annualized costs.

BACKGROUND

- The Clean Air Act requires EPA to develop rules to reduce air toxic emissions from categories of facilities that emit one or more of 188 listed toxic air pollutants. These rules require the application of strict emissions controls known as maximum achievable control technology.

- EPA identified Industrial Boilers, Commercial and Institutional Boilers, and Process Heaters as categories of major sources for which emission standards must be developed.

FOR MORE INFORMATION

- To download the final rule from EPA's web site, go to "Recent Actions" at the following address: *http://www.epa.gov/ttn/oarpg*.

- For further information about the final rule, contact Mr. Jim Eddinger at EPA's Office of Air Quality Planning and Standards at 919-541-5426.

- For information regarding boilers and process heaters, visit EPA's web site at: *http://www.epa.gov/ttn/atw/combust/boiler/boilerpg.html*. For other combustion-related regulations, visit EPA's Combustion Related Rules page at: *http://www.epa.gov/ttn/atw/combust/list.html*.